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## **Vitamin D and calcium influence cell death in the colon, researchers find**

Researchers at Emory University are learning how vitamins and minerals in the diet can stimulate or prevent the appearance of colon cancer.

Emory investigators will present their findings on biological markers that could influence colon cancer risk in three abstracts at the American Association for Cancer Research meeting in San Diego.

In a clinical study of 92 patients, supplementing diet with calcium and vitamin D appeared to increase the levels of a protein called Bax that controls programmed cell death in the colon. More Bax might be pushing pre-cancerous cells into programmed cell death, says Emory researcher Veronika Fedirko, who will present her team's results (abstract 464).

Previous studies have shown that calcium and vitamin D tend to reduce colon cancer risk.

"We were pleased that the effects of calcium and vitamin D were visible enough in this small study to be significant and reportable," Fedirko says. "We will have to fully evaluate each marker's strength as we accumulate more data."

The studies of colorectal biopsy samples are part of a larger effort to identify a portfolio of measurements that together can gauge someone's risk of getting colon cancer, says Roberd Bostick, MD, MPH, professor of epidemiology at Emory's Rollins School of Public Health.

"We want to have the equivalent of measuring cholesterol or high blood pressure, but for colon cancer instead of heart disease," Bostick says. "These measurements will describe the climate of risk in the colon rather than spotting individual tumors or cells that may become tumors."

More about Bostick's plans for developing non-invasive blood or urine tests for colon cancer risk is available in an Emory Health Sciences Magazine article:

[http://whsc.emory.edu/\\_pubs/hsc/winter08/pdf/hold\\_out\\_your\\_finger.pdf](http://whsc.emory.edu/_pubs/hsc/winter08/pdf/hold_out_your_finger.pdf)

Another abstract from Bostick and his colleagues (565) demonstrates in a 200-patient case-control study that high levels of calcium and vitamin D together are associated with increased levels of E-cadherin, which moderates colon cells' movement and proliferation.

A third abstract on the same case-control study (5504) shows that high levels of iron in the diet are linked to low levels of APC, a protein whose absence in colon cancer cells leads to their runaway growth.

Bostick and his colleagues are participating in a ten-year multi-center study of the effects of increased vitamin D and calcium and biomarker-guided treatment of colon cancer recurrence. The study involves almost 2,500 people nationwide who have regular colonoscopies.

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